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The *UPDATE*

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Proficiency Testing (PT) Studies

Please remember these few items when filling out the reporting forms that you send to the PT Provider:

- Make sure that your laboratory's SC ID number (for in-state labs) and EPA Lab ID number (for in-state and out-of-state labs) appears on the report you receive from the PT Provider. Without this information, you may not get credit for the work you have done.
- Send us copies of your reporting forms as you send the originals in to be graded by the PT Provider. This has helped resolve many issues with reporting problems from both the laboratories and the Providers.
- Make sure you participate in an official Water Supply (WS) or Water Pollution (WP) study. **Quick-turn around samples do not meet the EPA Criteria Document published in December 1998 and cannot be used for initial or annual PT certification requirements.** If you have questions regarding a specific study, please contact us.
- Review your data reporting forms before submitting them. **Changes made to the data reported no matter what the reason, cannot be used for certification purposes. This is true even if the Provider updates the report.** The only exception is if the Provider made a typographical or reporting error when printing the report. If the error is the laboratory's, the results cannot be used. Part of the reason for participating in the study is showing that the correct results can be reported for use. **Send a copy of the reporting forms that you send to the Provider to us when you send them to the Provider to be graded. This must be done prior to the close of the study.**
- Results must be submitted to the PT Provider **ON or BEFORE** the study close date. If the results are submitted after the published closing date of the study, the results will not be accepted and will be viewed as Unacceptable by this Office even if the Provider assigns a grade of "Acceptable". **It is against EPA and SCDHEC policy to accept results submitted after the closing date of a study.**
- The laboratory must document the analysis of the PT samples in the analytical records just like any other sample analyzed in the lab. This serves as a written record that can be used to show that the laboratory analyzed the samples. If the laboratory does not

maintain analytical records for the PT samples, the results will be considered null and void and decertification could result. The PT samples must be treated just as any other sample in the lab. Without documentation of the reagents used, the reagent volumes, the instrument readings, and so on, the laboratory cannot defend the reported data. The easiest and best way to track the PT results is to log them into your normal sample tracking system, assign them a sample ID number, and use the sample ID number in all of your analysis records.

- For all test methods including organics and microbiology, **if you do not detect an analyte in a particular sample, you must report the results as absent or less than your detection limit. Leaving the space blank does not indicate that you know that the analyte was absent and will be counted as a miss. The PT Provider will not grade the analyte if a result is not reported.** For example, for the microbiology PT samples, if total coliform is absent and you know that fecal coliform is absent, you must fill out the form properly indicating that fecal coliform is absent. The results will be unacceptable if this is not documented. For organics, you must report all of the regulated analytes. Leaving the spaces blank for the analytes that are non-detectable in the sample will result in a failure because a result was not entered to be graded.

Water Pollution (WP) Study - 2001

The WP study is used to assess the laboratory's proficiency in two ways. If the laboratory is applying for certification for parameters under the Solid/Hazardous Waste category, the WP study is used to demonstrate the laboratory's proficiency. If you are applying for pH (EPA 9040B) solid/hazardous waste category, a WP result for pH (EPA 150.1) will be accepted. The method reported on the WP study must be the Clean Water Act equivalent of the Solid/Hazardous Waste method.

The WP is also used to determine laboratory proficiency for the parameters listed under the laboratory's Clean Water Act certificate. This applies whether the laboratory is applying for parameters or is performing the annual WP study. When reporting the WP study, you must use and report the methods listed under the Clean Water Act section of the laboratory's certificate. **A list of parameters required on the WP study are included in this newsletter.**

The WP study schedule is from July 2001 through December 31, 2001. Please ensure that your PT Provider sends this Office a copy of the results by December 31, 2001. **All WP reports must be submitted to this Office by the PT Provider. The laboratory cannot submit photocopies of the reports.**

Water Supply (WS) Study - 2002

The WS study is used to assess the laboratory's proficiency for the parameters listed under the Safe Drinking Water Act section of the laboratory's SC certificate. The laboratory must **use and report** the methods that are listed under the Safe Drinking Water Act section of its certificate when analyzing the WS samples. **A list of the parameters required on the WS study are enclosed in this newsletter.** If you have any questions regarding which parameters you need to analyze on the WS study, please contact Connie Turner at (803) 896-0976.

The WS study schedule is from January 2002 through June 30, 2002. Please ensure that your PT Provider sends this Office a copy of the results by June 30, 2002. **All WS reports must be submitted to this Office by the PT Provider. The laboratory cannot submit photocopies of the reports.**

New for 2002 Water Supply (WS) Study

Radiologicals are here. **If you are certified for radiologicals under the Safe Drinking Water Act, you now must perform a WS Study for radiologicals during each WS study period (January through June each year) – starting January 2002.** The required analytes are listed on the WS parameter list included in this publication. At the time of publication, Environmental Resource Associates (ERA) is the only NIST-approved PT Provider. All PT Provider certifications can be checked on the internet at: <http://ts.nist.gov/ts/htdocs/210/214/scopes/calchem.htm>.

A Note About Applications...

When submitting an application, please ensure that it is complete. There are checklists available on our website to assist you in completing the application package. You can also obtain a copy of these by contacting anyone in our Office at the telephone number or e-mail address listed at the end of this newsletter. Here are a few reminders:

- Properly fill out the application form. Be sure that the methods for which you need certification are circled. It is best to use a colored ink (red, blue, green, etc.) other than black ink when circling the method numbers. The application print is in black ink and using a different color to fill out the application minimizes any errors when processing the application. Be sure that the laboratory director signs the application.
- Include a copy of your PT results so that we can look in our files for the copy submitted by the PT Provider.
- For in-state laboratories: Include a copy of your benchsheets or instrument printouts for each method you are requesting. These sheets should be filled in with the analysis data for the PT samples that you analyzed in order to obtain certification. If a PT sample is not required for the method or parameter you are requesting, analyze a sample but do not report the results for compliance reporting. Please also be sure to include all calibration records, where applicable, with the supporting data so that the calibration can be verified.
- Include all SOPs for the methods you are requesting. If the method requested has multiple preparation methods, include the SOPs for the preparation methods desired.
- For out-of-state laboratories, include a copy of the on-site evaluation report performed by the Certifying Authority you are using to obtain certification in SC. Please also include your laboratory's response to the on-site evaluation report.
- Send a current dated check payable to SCDHEC for the \$125 application fee. This fee is not billed to the laboratory, and we cannot accept purchase order numbers. The fee must accompany the application. The application fee is used for processing the application. Certification fees are assessed separately and will be billed to the laboratory upon approval for the requested methods.
- Most importantly, send all information at the same time. We cannot review application packages in part. If you receive a deficiency letter as a result of your application, address all of the issues in the letter and submit them all together.

Chlorine Dioxide and Chlorite Certification

Systems that use chlorine dioxide as a disinfectant must measure residual disinfectant concentrations for chlorite, free chlorine, combined chlorine (chloramines), and chlorine dioxide under the Disinfectants and Disinfection Byproducts Rule. Laboratories will be required to apply for certification to measure and report chlorine dioxide and chlorite results. An acceptable result for a PT (Proficiency Testing) sample is required for chlorite certification with the submission of a complete application package. Laboratories currently certified for chlorine residual using Standard Methods 4500Cl D, Standard Methods 4500Cl F, and/or Standard Methods 4500Cl G can perform free chlorine and combined chlorine (chloramines) analyses using one of these same methods. A standard operating procedure and analysis records must be available for review when requested.

For certification information for chlorine dioxide and chlorite, please contact our office or visit our website at www.scdhec.net/labcert. On the website, select "Application for Certification" and "Application for Certification instructions".

Calibration and Calibration Verification of On-line Turbidimeters

If using on-line turbidimeters for compliance reporting the following requirements must be followed for calibration and calibration verification:

Calibration – Quarterly using the Manufacturer's Instructions

Calibration of the on-line turbidimeter for both combined filter effluent monitoring and individual filter turbidity must be performed at least quarterly according to the manufacturer's instructions. It is very important to follow the manufacturer's instructions for calibration; this will help to ensure that calibration verification results are within the specified limits.

Maintenance must also be performed quarterly or more frequently if problems are noted. The lamp should be changed on an annual basis. An SOP must be available documenting the procedure used by the laboratory for calibration as well as maintenance of the on-line turbidimeters.

A bench-top turbidimeter must not be used for calibrating the on-line turbidimeter. This can introduce error into the readings.

After calibration, the calibration must be verified by using the calibration verification procedure listed below.

Calibration Verification

Calibration verification of on-line turbidimeters must be performed weekly for both combined filter effluent monitoring and individual filter turbidity.

Calibration verification must be performed using primary or secondary standards at 0.5 NTU. Results of the calibration verification standard must be within $\pm 10\%$ of the true value unless the manufacturer of the on-line turbidimeter has more stringent requirements. Records must be maintained for the weekly calibration verifications and if results do not meet the $\pm 10\%$ criteria,

records must indicate that the on-line turbidimeter has been recalibrated and is capable of reading the calibration verification standard within $\pm 10\%$ of the true value.

Records must be maintained by the laboratory for all calibrations and calibration verifications performed on the on-line turbidimeters along with any maintenance performed. The minimum information required is the date and time, analyst's initials, standard true value, standard reading, indication if maintenance is performed, and the standard source (i.e. formazin, StablCal™, ICE-PIC™, etc.) for the primary and secondary standards.

Definitions

Calibration: A procedure, which checks or adjusts an instrument's accuracy by comparison with a defined standard or reference.

Calibration Verification: A procedure used to check whether or not the calibration of the instrument is within certain limits.

Primary standard: A standard used to calibrate the instrument response with respect to analyte concentration. Formazin, StablCal, and AMCO-AEPA-1 are considered primary standards by the EPA for turbidity.

Secondary standard: A standard that the manufacturer (or an independent testing organization) has certified will give instrument calibration results equivalent (within certain limits) to the results obtained when the instrument is calibrated with primary standard i.e., formazin. A secondary standard is used for daily or weekly calibration verification and is monitored periodically for deterioration using one of the primary standards.

NEWEPA Proposed Rule:

Analytical Methods for Biological Pollutants in Ambient Water

On August 30, 2001, the EPA proposed a regulation that would amend the "Guidelines Establishing Test Procedures for the Analysis of Pollutants" 40 CFR Part 136 under the Clean Water Act by adding several analytical test procedures for enumerating the bacteria, Escherichia coli (E.coli) and enterococci, and the protozoans, Cryptosporidium and Giardia, in ambient water to list the agency approved methods. The comment period for this proposed rule ended October 29, 2001.

PROPER USE OF YOUR CERTIFICATION NUMBER

Due to some recent confusion over the reporting of certification numbers, we would like to offer some guidance on the proper use of assigned certification numbers.

Who is certified? A "laboratory" is certified, not an individual. A laboratory may consist of one employee or many employees. Anyone who is employed, trained and is under the direct supervision of the laboratory director can use the laboratory's certification number, when performing analyses for that laboratory to be reported by that laboratory. It is the laboratory's responsibility to provide the proper equipment and supplies, as well as, properly train employees.

Remember: If an employee leaves his/her employment with Company "A", Company "A" retains the certification number.

Who needs Certification? Certification is needed for any laboratory performing analyses to determine the quality of air, drinking water, hazardous waste, solid waste, or wastewater; performing bioassays, or performing any other analyses related to environmental quality evaluations required by the Department or which will be officially submitted to the Department. Possessing the proper certification means that your analytical data can/may be accepted by DHEC for regulatory reporting.

Here are some examples of how to report your certification number:

- 1) "John" is employed by Company "A" and performs pH analysis for Company "A". Therefore, he reports Company "A's" certification number.
- 2) "John" works for Company "A" and Company "B" contracts with Company "A" to perform their pH analysis. Because "John" is using Company "A's" equipment (meter) and supplies (buffers), "John" must report Company "A's" certification number.
- 3) "John" decides he would like to earn some extra money and wants to perform pH analysis on his own. In this scenario, "John" **CANNOT** use Company "A's" certification number.

Why? Because "John" is not under direct supervision of, or employed by Company "A". Company "A" was not hired to perform the analysis, does not report the analysis results and is not responsible for the quality of the data. "John" would have to purchase his own equipment, apply for certification and receive his own certification number, in order to perform pH analysis for his clients.

Note: It is up to "John" to make sure that his "moonlighting" does not cause a conflict of interest with his employer.

How do I get certification? Apply to DHEC Office of Environmental Laboratory Certification. Just contact our Office and ask for a certification package, or visit our website at www.scdhec.net/labcert. We will send you all the information you need to get started. It is, however, up to you to follow the instructions and return a complete package. The certification process is slowed greatly when we do not receive everything that is required when an application is submitted.

If you have any questions about certification, please contact any of the LCO's at the phone number or e-mail address listed at the end of this publication and they'll be happy to help.

How to Contact Us...		
Employee	Phone Number	E-Mail Address
Wayne Davis, Director	(803) 896-0972	davisrw@columb36.dhec.state.sc.us
Amy Bennett	(803) 896-0977	bennetam@columb36.dhec.state.sc.us
Iris Cantrell, Financial Contact	(803) 896-0971	cantreiw@columb36.dhec.state.sc.us
Leigh Plummer	(803) 896-0978	plummelw@columb36.dhec.state.sc.us
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Do you have a question or issue you would like to see addressed in the next issue of the "Update"? If so, please contact Connie Turner and your question or comment may appear in the next issue of the "Update".

Water Supply (WS) Study 2002

The list of parameters that require PT samples is the same for 2002 as it was for 2001. The following is a list of parameters that require PT samples. If any of these appear on your laboratory's certificate under the Safe Drinking Water Act, you must order and analyze a PT sample for them. Remember to analyze and report them using each method for which you are certified.

Trace Metals

Antimony
Arsenic
Barium
Beryllium
Boron
Cadmium
Chromium
Copper
Lead
Manganese
Mercury
Molybdenum
Nickel
Sodium
Selenium
Thallium
Zinc

Inorganic – Demand

Total Organic Carbon (TOC)

Inorganic – Mineral

Alkalinity
Calcium-Hardness
Fluoride
PH/ Hydrogen-Ion Conc.
Sulfate

Inorganic – Misc.

Cyanide
Residual Chlorine
Turbidity
Asbestos

Inorganic – Nutrient

Nitrate-Nitrogen
Nitrite-Nitrogen
Orthophosphate

Inorganic – Residue

Residue, Filterable (TDS)

Radiologicals

Cesium-134
Cesium-137
Cobalt-60

Iodine-131

Gross Alpha
Gross Beta
Radium-226
Radium-228
Strontium-89
Strontium-90
Tritium
Uranium

Volatile Organic Compounds (VOCs)

Regulated VOCs
Unregulated VOCs
Trihalomethanes

Synthetic Organic Compounds (SOCs)

EDB and DBCP
Haloacetic Acids
Pesticides
Chlorinated Acids (Herbicides)
Diquat
Endothall
Glyphosate
N-Methyl Carbamates
PCBs as Decachlorobiphenyl
Phthalate and Adipate Esters
Benzo(a)pyrene
2,3,7,8-TCDD

Disinfection By-Products

Bromate
Bromide
Chlorite

Microbiology

Total Coliform

Water Pollution (WP) Study Parameters

The list of parameters that require PT samples is the same for 2001 as it was for 2000. The following is a list of parameters that require PT samples. If any of these appear on your laboratory's certificate under the Clean Water Act, you must order and analyze a PT sample for them. Remember to analyze and report them using each method for which you are certified.

Trace Metals

Aluminum
Antimony
Arsenic
Beryllium
Cadmium
Chromium
Cobalt
Copper
Iron
Lead
Manganese
Mercury
Molybdenum
Nickel
Selenium
Silver
Strontium
Thallium
Titanium
Vanadium
Zinc

Demands

Total Org. Carbon (TOC)
Chem. Oxygen Demand (COD)
5-day BOD
Carbonaceous BOD

Inorganic – Residues

Non-filterable (TSS)
Filterable (TDS)

Inorganic - Mineral

Alkalinity
Calcium
Chloride
Specific Conductance
Fluoride
Total Hardness
Magnesium
Potassium
Sodium
Sulfate

Inorganic - Nutrients

Ammonia
Nitrate-Nitrogen
Orthophosphate
Total Kjeldahl Nitrogen (TKN)
Total Phosphorus

Inorganic - Misc.

Total Cyanide
Total Residual Chlorine
Hydrogen-Ion Conc. (pH)
Total Phenolics
Oil & Grease

Pesticides

Aldrin
Chlordane (Total)
Dieldrin
DDD
DDE
DDT
Heptachlor
Heptachlor Epoxide (beta)

PCBs in Water

Aroclor 1016 or 1242
Aroclor 1232
Aroclor 1248
Aroclor 1254
Aroclor 1260

PCBs in Oil

PCBs in Oil 1016/1242
PCB in Oil 1254
PCB in Oil 1260

Volatile Halocarbons

1,2-dichloroethane
Chloroform
1,1,1-trichloroethane
Trichloroethene
Carbon Tetrachloride
Tetrachloroethene
Bromodichloromethane
Dibromochloromethane
Bromoform
Methylene Chloride
Chlorobenzene

Volatile Aromatics

Benzene
Toluene
Ethylbenzene
1,2-dichlorobenzene
1,3-dichlorobenzene
1,4-dichlorobenzene

In This Issue...	Page Number
General PT Issues.....	1
2001 Water Pollution (WP) Study.....	2
2002 Water Supply (WS) Study.....	2
New Requirements for 2002 WS Study.....	3
General Issues for Submitting Completed Application Packages.....	3
Chlorine Dioxide and Chlorite Certification.....	4
On-Line Turbidimeter Calibration.....	4-5
New EPA Proposed Rule for Clean Water Act.....	5
Proper Use of your Certification Number.....	5
Contact Names, Telephone Numbers, and E-mail addresses.....	6
WS Study Parameters Required for 2002.....	7
WP Study Parameters Required for 2001.....	8
WS Study Announcement Flyer.....	Separate Paper included with this Issue of the Update



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